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POSTURE FOR OPERATIONAL SUCCESS:
CREATE THE THEATER MISSILE DEFENSE COMPONENT COMMANDER

by

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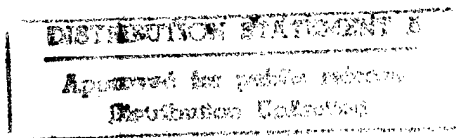
A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: M.S. Hill

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<p>15. Abstract: Theater Missile Defense doctrine was developed out of the limited lessons learned during the Gulf War. It is the contention of this paper that this doctrine was formed however without a credible TBM threat and is flawed in certain areas. First, in the face of a substantial TBMD threat, the JFACC, who is tasked with TBMD, will be overwhelmed by other duties and will not provide sufficient attention to the TBMD problem. Secondly, TBMs pose a threat to the level that if it is subordinated in this manner, that critical operational decisions will be delegated down to levels of command and control that will have severe negative operational consequences.</p> <p>Given the above implications, this paper suggests the creation of a component level commander to perform the duties of TMDCC. Through well-defined concepts of operation and command and control, the TMDCC is the best choice for executing the JFCs TBMD needs. Additionally, is a discussion of how the TMDCC fits in to the schema of the Revolution in Military Affairs, and also that no matter how advanced TBMD and its associated systems become, they will never substitute for the definitive person in charge of TBMD.</p>			
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Introduction

With the first Scud missile attack launched from Iraq towards the Desert Storm coalition forces in early 1991, Theater Ballistic Missile Defense (TBMD) has become an operational concept that has been steadily gaining in importance. As evidenced by an outlay of approximately of sixty four billion dollars since the initiation of the Strategic Defense Initiative, TBMD continues to be funded to create a needed operational umbrella for our forces, and a strategic umbrella for the population centers and infrastructures they are defending. An obvious outgrowth of Desert Shield/Desert Storm was the creation of Joint Publication 3-01.5, Doctrine for Joint Theater Missile Defense, dated 22 February 1996. While this doctrine does outline the tenets of Theater Ballistic Missile Defense (TBMD), it subordinates the role of command and control of TBMD assets to the Joint Force Air Component Commander (JFACC) or the Area Air Defense Commander (AADC). The purpose of this paper is to prove that this doctrinal structure is inadequate, and that fielding adequate TBMD requires a Theater Missile Defense Component Commander (TMDCC). While the joint doctrine encompasses both cruise missile and ballistic missile defense, this paper will only address this issue from a ballistic missile defense standpoint, as it is the near term threat, and for its strategic implications.

The following approach will be taken to prove the need for a TMDCC and how its creation will benefit the Joint Force Commander (JFC) by:

- (1) Illustrating the TBMD threat and its potential impact on future operations.
- (2) A brief synopsis of active TBMD developmental programs.
- (3) The current doctrinal organization and its shortcomings.
- (4) A theoretical example of a TBMD command and control failure gleaned from an actual joint TBMD exercise.

(5) Proposed duties and responsibilities of the TMDCC.

(6) How the TMDCC concept fits into the emerging system of systems.

As enormous sums of money are spent in the development and fielding of complex TBMD systems to meet the burgeoning threat, we also need to devote the requisite resources to develop and field doctrine to support its most effective use. As illustrated in the following, the stakes really are simply too high to do otherwise.

Growing Threat of Theater Ballistic Missiles

Table 1: Sample of Theater Ballistic Missile Deployments¹

MISSILE NAME:	NO DONG	UNKNOWN (under development)	CSS 2	SCUD	M-11 M-9	Agni
RANGE (NM):	600	1200 - 2000	1700	180	180 375	1500
COUNTRY:	North Korea Libya, Iran	North Korea	China Saudi Arabia	Afghanistan Egypt, Iran Libya, North Korea South Yemen UAE, Vietnam	Pakistan Syria	India

Table 1.

Theater missile technology is proliferating in many ways. Table 1 above, is a sampling of both existing and projected TBM deployments. By the end of the century the world could see at least twenty countries possessing this technology.² Secondly, and more alarmingly, weapons of mass destruction (WMD), the aggregate reference to chemical,

biological, and nuclear weapons, are also spreading, with a projected forty nine countries expected to have them by the end of the century.³

While the demise of the Former Soviet Union (FSU) brought the end of the Cold War, it also brought for them internal turmoil, economic hardship, and fragmented foreign policy, one largely driven by economic need. As the need for hard currency has risen, the FSU is now selling space launch technology to those who can afford it. While these launch vehicles are being marketed for the purpose of putting payloads into space, there is no international monitoring system in place to keep a country from modifying the vehicle to carry and deliver a destructive warhead.⁴ Also, consider that there are a number of FSU scientists formerly associated with nuclear weapon programs also in need of employment, which could certainly be provided by cash rich foreign governments with world views substantially different than our own.

Theater Ballistic Missiles (TBM) are a relatively cheap force multiplier. While during the Gulf War, Iraqi Scud missiles were used in a somewhat haphazard fashion, with somewhat indiscriminate targeting, a single Scud missile with a conventional warhead accounted for twenty percent of all United States combat fatalities.⁵ Modify a TBM to utilize Global Positioning System data, and suddenly an opponent with limited conventional forces now has the ability to stifle, disrupt, or even end an operation, campaign, or war. TBMs are tool to be used on different levels of war, not just a means of influencing the tactical situation on the battlefield:

“...many leaders may seek a ballistic missile capability as a means of acquiring more recognition, prestige, credibility, and power. This is particularly true for aggressive ones, wanting to pursue regional hegemony.”⁶

Thus, an adversary who does not have symmetrical conventional capabilities now has the ability to wield influence at a regional level, possibly in ways that are counter to United

States foreign policy. Looking at the problem in the context of its effect on the principles of war, TBMs impact them in the following areas:

- Preoccupation with TBMD when faced with scarce resources can cause operational commanders to lose focus on the objective.
- Preoccupation with the TBM threat could lead operational commanders to focus on defensive rather than offensive operations.
- In order to better protect his forces, a dispersed deployment to negate the TBM threat may impact the operational commander's ability to mass his forces effectively.
- Economy of force may be forsaken in order to deal with the threat (e.g. the Gulf War Scud Hunt)
- Operational security, such as the protection of rear areas, could be threatened by an inability to protect forces from TBM attacks⁷

TBMs, when properly employed, have serious consequences for the operational commander.

TBMD Systems Initiatives

To deal with the proliferation of TBMs, the United States has embarked on development of a series of TBMD weapon programs to deal with the threat.

U.S. and Allied TBMD Initiatives⁸

Weapon System	First Unit Equipped	Coverage Capability
Patriot Advanced Capability (PAC) 2 Guidance Enhanced Missile (GEM)	In Operation	Area
Patriot Advanced Capability 3 (PAC-3)/Extended Range Interceptor (ERINT)	1999	Area
Navy Area Defense (SM2 BLK IV A)	2002	Area
Medium Extended Air Defense System (MEADS)	2002+	Area
Theater High Altitude Air Defense (THAAD)	2004	Theater Wide
Navy Theater Wide System (NTW) Light Exoatmospheric Projectile (LEAP)	2002+	Theater Wide
Airborne Laser (ABL)	2002	Theater Wide (Boost Phase Intercept)

Table 2.

These systems, together with improvements in command and control hardware and software will eventually give the JFC the ability to defend his theater of operations from TBM attack. However, as you will see in the following, we do not seem to be devoting the same amount of attention to the decisions of how best to control these assets.

TBMD: Current Doctrinal Organization

JCS Pub 3-01.5 breaks theater missile defense into four components:

- (1) TBMD attack operations (going after missiles and their associated systems on the ground prior to launch)
- (2) Passive TBMD (deception, early warning, dispersion plans).
- (3) Active TBMD (Patriot, etc.).
- (4) Battle Management Command Control Communications Computers and Intelligence (BMC4I).

The first three components are envisioned by some as pillars, all supported by BMC4I, illustrating the importance it has in integrating the various elements in order to carry out the will of the JFC.

Current doctrine for TBMD evolved to a great extent from lessons learned from the Gulf War. During this period, a number of things occurred that would influence the doctrine we have now, and will probably continue to keep the discussions going as to who commands TMD assets in the future. First, it is unarguable that coalition forces mounted the most successful air operations ever attempted, and was validation for the tenets of air power, which comprises the foundation of current U. S. Air Force doctrine. Combined air forces were quite effective in accomplishing operational objectives and were also very successful from a joint perspective. Secondly, these air operations, including the aspects of TBMD, were executed under the JFACC concept, thereby lending credence to this

doctrinal view. This validation greatly influenced our current doctrine, which places TBMD firmly in the JFACC arena, where this duty may or may not be subordinated to the AADC. From there, however, the waters become muddy. Instead of a clearly defined hierarchy for TBMD command and control, we are left to ponder guidance such as the following:

"Close coordination among component commanders, the JFC, and the AADC (if designated) is necessary to employ the most appropriate resources and measures to execute joint theater missile defense operations and ensure a synergistic effort."⁹

Close coordination is fine and of course, is necessary to any successful operation. But is it sufficient to only use coordination for something that requires such a high degree of precision and integration? Given the fact that TBMs can threaten all forces in either a sea or land environment, and that the pillars involve such a diversity of assets, it is easily understood that TBMD is inherently a joint mission, requiring a fusion of diverse assets in order to be effective. While the tenets of air power cite unity of effort issues and past successes as reasons to keep JFACC in control, I submit that these conclusions were formed in the relative vacuum of no real TBM threat. While Iraq had TBMs, they were used, more or less, as a remotely delivered terrorist's bomb vice a weapon to have its effects massed against vital targets. Given the pace of technological advancement, and the lessons learned during the Gulf War, the next time TBMs are used, they will most certainly be more effective. While the above quote lifted from doctrine espouses the requirements for coordination, to produce synergy, in the test of battle or even in the context of an exercise, it was not, and in the future, will not be sufficient to achieve effective TMD. The frequent use of generic statements for the fostering of cooperation,

in place of a realistic workable command and control structure, is endemic of the joint doctrine as a whole.

JFACC TBMD Concerns

Part of the problems of developing a coherent picture of who is in charge with regards to TBMD stems from the fact that attack operations, inherently an air power intensive effort, is operationally incongruous with other aspects of TBMD. While strikes on ballistic missile sites, whether reactive or preemptive, are seen as defensive (they destroy TBMs or the ability to conduct future launches), operationally, they require the active employment of offensive resources. Hence more often than not, attack operations are planned, as would be any offensive operation. According to their doctrine, the Air Force supports JFACC control of TBMD because of its role in attack operations. They also consider active TBMD is simply a subset of Theater Air Defense Operations. The Army, on the other hand, prefers TBMD be conducted with as little help from the JFACC as possible, in other words, managing defense at the component level.¹⁰

Keeping TBMD responsibilities with the JFACC creates several problems that would adversely affect operations in a TBM environment. First, given the level of planning, coordination, and production of products such as the Air tasking Order (ATO) and comprehensive inputs into the Joint Integrated Prioritized Target List (JITPL), does the JFACC really have either the resources or time to devote to the design, deployment, and control of active theater missile defense? Second, if control of defense has been passed to the Control and Reporting Center (CRC) level from the JFACC or the AADC (which Air Force doctrine sees as a transient planning function), should the CRC for a specific area have the responsibility or authority to shift coverage or re-task TBMD assets

which may be employed in another mission? In a large theater of operations, several CRCs may exist, further diluting command and control of TMD assets. Finally, in circumstances where there is overlapping coverage for defensive assets, who would be responsible for ensuring economy of force in their employment, maximizing capabilities, yet minimizing problems such as dual engagements? It is hard to imagine conducting joint operations in an environment where active TMD does not have a well-defined structure for its execution.¹¹

Roving Sands 1996: A Study in a breakdown of Command and Control

During exercise Roving Sands 1996, an interesting series of events occurred which illustrate the problems that arise from not having a well-defined command and control structure for TBMD.¹² United States and coalition forces are engaged in war on the side of country Blue against country Orange. Patriot missile batteries are positioned in Blue to provide area protection for coalition forces deploying for the impending action. Off the coast of Blue, a TMD capable AEGIS cruiser is providing force protection for Blue seaport, which is the main coalition supply and equipment staging area. AADC duties are resident in the coalition command center in the capital of Orange. The Aegis cruiser coordinates with the Patriot batteries ashore to maintain a theater TMD picture. Theater Missile Defense has been passed from the JFACC to the AADC as an additional duty, although his assets are essentially under autonomous control (i.e. army brigade commander retains operational control of the Patriot batteries, battlegroup commander controls the cruiser).

During the course of the operation, Orange conducts several TBM attacks on country Blue, causing expenditure of assets by both Patriot and Aegis. At a certain point

in the operation, the battlegroup commander determines that he can no longer afford to provide sector coverage for the Blue sea port, therefore he requests Patriot battery support from the Brigade Commander. For reasons of his own force protection, he refuses. The battlegroup commander, however, ceases his coverage anyway. Shortly thereafter, country launches a barrage of TBMs at country Blue port facility, striking several coalition ships, and a munitions stockpile, causing destruction of invaluable equipment, and a large loss of life. The operation is set back at least two months.

Why did this happen? In the exercise it happened because there was not positive control of all TBMD assets by a single commander. While exercises such as Roving Sands tests the employment of projected hardware capabilities, attention to doctrinal shortfalls, such as the one alluded to above, is simply not keeping pace. While we learned many lessons from the Gulf War, we must not forget that technology is not a substitute for training, and that without a methodology for operation, meaningful training cannot take place.

Below are some considerations that would have faced the TMDCC had one been established in the above situation:

- In cases of inadequate TMD resources, conflicts concerning coverage priority will arise that must be evaluated and resolved.
- In the foreseeable future, inadequate TMD resources will probably be the norm, rather than the exception, especially if assets receive multiple assignments (e.g. Aegis cruiser serving as sector TBMD ship and carrier air defense platform).
- TMD systems are capable of a finite number of engagements and their usage must be scrutinized to ensure economies of force.

Decisions stemming from the above assumptions merit component level attention, given poor decisions have theater-wide implications. Calls for coordination in JCS Pub 3-01.5 work well enough until some of the above considerations come to fruition. The situation begged for a TMD Commander, one with an operational level vision of the battlespace,

charged with making tough decisions with regards to TBMD, and given the requisite authority/control of assets to carry them out. Active defense and the provision of force protection need a definitive person in charge. Additionally, given the disparate planning domains required for air operation as opposed to an active theater missile defense, it is difficult to imagine the JFACC trying to be successful at both.¹³

TMDCC Recommendations

Given the implications of the previous information, more often than not, the JFC is going to need a person in charge in order to meet the needs of TBMD. At a minimum, the TMDCC should be responsible for the following:

- **Establish and maintain control of all dedicated TBMD assets.**
- Create plans for the conduct and execution of active TBMD.
- Delegate attack operations to the JFACC. Provide information as needed. Obtain attack results (BDA). Incorporate into TBMD fusion plot.
- Plan, prioritize, and track all TBMD engagements, report results to JFC, and other component commanders as necessary.
- Provide cueing information to all active defense assets.
- Obtain weapons expenditure reports from all defense assets and report status to JFC.
- Maintain the TBMD fusion plot for the JFC, serving as control point for all TBMD activities.
- Interpretation and Dissemination of all TM launch detection reported by national Defense Support Program (DSP) and other launch detection assets.
- Assign, prioritize, and reconfigure as necessary TBMD sector coverage; report all changes to AADC, and JFC.
- Generate TBMD concept of operations.
- Reports to the JFACC and Aerospace Control Authority (ACA) of all TBM engagements.
- Recommend Rules of Engagement changes as necessary to JFC to facilitate effective TBMD.

Other Considerations:

Who should be the TMDCC? Previously, I have illustrated who should NOT be the TMDCC, that is the JFACC, or for that matter, any commander who has responsibilities which will detract from the conduct of TMD. The TMDCC should be someone who has had experience in missile defense and joint operations. Given the severity of the consequences for fielding a poor defense, the TMDCC should reside at the component level, and be capable of bringing understanding, maturity, and judgement to

the arena. Poor decisions on his part could spell disaster for operations. In order to be successful, the TMDCC must also have support from and access to intelligence and space based assets in order to most effectively employ TBMD resources. This in turn must be expediently and accurately processed and then disseminated to all players, including the JFACC, who would then use this information as targeting for quick response attack operations.

When examined from a principles of war perspective, the TMDCC most benefits the JFC through the unity of effort produced by having a focal point for active TMD. As his agent, the TMDCC is his single point of contact for providing his force TBM protection, vice a dual hatted commander who has delegated TMD to a subordinate level. The TMDCC also better supports the tenet of centralized command, decentralized execution, for the same reasons mentioned above. Assets dedicated to the TMDCC will better understand mission priorities, since they will have a commander providing them a TMD concept of operations, and the requisite deconfliction that inevitably arises out of battle.

TMDCC: Part of the Revolution in Military Affairs

Theater missile defense and the concept of the theater missile defense commander both fit into the concept of the revolution in military affairs (RMA). Briefly stated, a RMA is an idea that is fundamentally going to change the way we conduct warfare. If one accepts that the recent myriad of technological advances are fueling a RMA, then TBMs and their countering defensive systems (and the BMC4I required for their command and control ((C2))), are at the heart of it. In a recent address, Dr. Paul Kaminski said the following:

"To counter the proliferation of WMD, increase the effectiveness of attack operations against enemy ballistic missile launchers, and facilitate an improved cruise missile defense, our BMC4I systems need to be considerably more robust and timely in collecting multi-source and continuous surveillance data...as well as storing, processing, disseminating and managing much larger quantities of information." ¹⁴

The need for developing dominant battlespace awareness is a major part of fielding a credible theater missile defense. If one considers the diversity of assets that would be involved to consummate a successful TBM engagement, one easily sees that twenty first century theater missile defense will be comprised of a system of systems.¹⁵ At present, each service has embarked on development of BMC4I systems to achieve omniscience on the battlefield. In order to conduct effective TMD in the future, these systems must share data in a common format in order to achieve the synergy produced by bringing diverse assets to bear in what is certainly a joint mission. Products such as the Joint Data Network (JDN) are being designed to foster interoperability between systems, by providing a common link to tie them together. And while hardware links to diverse systems are being designed, the need for the TMDCC is even greater, due to the need for precision in the control and integration (vice loose coordination) in this system of systems.

Another major tenet of the RMA concept of twenty first-century warfare is the term "sensor to shooter" which is slang for the concept of having all information available to units in the field vice disseminated via traditional hierarchical channels. At first glance, the concept of having all pertinent engagement information piped directly to firing units in the field might seemingly negate the need for certain echelons of C2. While this may change the way we consider traditional hierarchical types of C2, since conceivably all units will have the same information available, the "fog of war" that inevitably arises out of

battle, will always dictate the need for the definitive "person in charge," one to make decisions arising from unplanned contingencies.¹⁶

Conclusion

Given the magnitude of the threat concerning theater ballistic missiles and weapons of mass destruction, future joint force commanders need a component commander exclusively in charge of theater ballistic missile defense. While established doctrine subordinates this duty under the JFACC, exercise experience has proven this to be unacceptable, with the ensuing confusion resulting from ambiguous command and control resulting in potentially disastrous results. The missile defense component commander would be the JFC's agent, developing and promulgating guidance to his assigned assets on the pertinent concepts of operation with regard to ballistic missile defense. Benefits such as unity of effort and economy of force would result from having a single person in charge, as he would be unarguably responsible for the conduct of TBMD.

As new ballistic missile defense systems and their associated command and control systems, are developed and fielded, this emerging system of systems needs a component commander to serve as its focal point, in order to ensure its effective utilization. While TBMD systems become increasingly complex and capable of processing and disseminating large amounts of information, they will never substitute for the commander responsible for resolving the conflicts that inevitably arise from the test of battle. The creation of the TMDCC postures the operational commander for success by providing the C2 structure needed for theater-wide TBMD protection.

Notes

¹ Michael W. Ellis and Jeffrey Record, "Theater Ballistic Missile Defense and US Contingency Operations," Parameters, Spring 1992, 13.

² Stephen J. Hadley, "Why We Need A Missile Shield," National Review, July 31, 1995, 30.

³ Ibid.

⁴ Ibid., 31.

⁵ Ibid., 30.

⁶ Kevin E. Mc Hugh, "Ballistic Missile Defense: Putting a 'Roof' Over Our Forces in the Theater", Unpublished Research Paper, Naval War College, Newport RI: 1994, 11.

⁷ Ibid., 15.

⁸ Paul G. Kaminski, "Statement," Joint Session of Subcommittee on Military Research and Development and the Subcommittee on Military Procurement of the House Committee on National Security. September 27, 1996. 3-8.

⁹ JCS Pub 3-01.5, February 1996, II-7.

¹⁰ Charles A. Anderson and Richard G. Kurtz, "Air and Missile Defense: Who's in Charge", Air Defense Artillery, July-August 1996, 3.

¹¹ Ibid., 4-5.

¹² For the sake of brevity, the geographic context in which this scenario is presented is generic in nature. However, the command structure and TBMD assets described are identical as to what was used during the exercise.

¹³ Anderson and Kurtz, 5.

¹⁴ Dr. Paul Kaminski, remarks to the ADPA/AUSA symposium, January 16, 1996, 3.

¹⁵ Admiral William Owens, "The Emerging System of Systems", U. S. Naval Institute Proceedings, May 1995, 35-39.

¹⁶ Anderson and Kurtz, 7.

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